

The martins appeared to be dusky brown above, darker on the wings and tail. The whitish underparts were boldly streaked throughout with dark brown, and the flanks were somewhat dusky. In the air, their languid flight set them apart from most other East African hirundines at first glance.

This appears to be the first observation of *Phedina borbonica* in Kenya, and the first inland record anywhere in East Africa. Mackworth-Praed & Grant (1960) attribute the species to Pemba Island, presumably based on Moreau & Pakenham (1941), between November and March and in August and September. Interestingly, in Malawi, Benson & Benson (1977) also recorded Mascarene Martins at an inland lake during late June: "Collected, and plentiful, over Lake Chilwa, 28 June 1944 (Benson)." The Bensons also cite Long's record of eight birds of this species seen in flight near Chididi, Malawi on 6 April 1959. I am aware of no other mainland reports of this readily identified species.

My thanks to G.R. Cunningham-van Someren and D.A. Turner for information concerning the Malawi records.

#### REFERENCES

- BENSON, C.W. & BENSON, F.M. 1977. *The birds of Malawi*. Limbe: Mountford Press.
- MOREAU, R.E. & PAKENHAM, R.H.W. 1941. The land vertebrates of Pemba, Zanzibar and Mafia: a zoo-geographic study. *Proceedings of the Zoological Society of London Series A*, 110: 97-128.

Dale A. Zimmerman, Department of Biological Science, Western New Mexico University, Silver City, N.M. 88061, U.S.A.

Received 12 September 1978

SURVIVAL AND INTERCOLONY MOVEMENT OF WHITE-BROWED SPARROW WEAVERS *PLOCEPASSER MAHALI* OVER A TWO-YEAR PERIOD Ringing of individuals with distinctive combinations of coloured rings makes information on their survival and movements readily available, and is a feasible procedure where numbers of individuals to be observed are not too great. In 1976, from 17 March to 17 June, we ringed 45 adult or independent young White-browed Sparrow Weavers in the Samburu-Buffalo Springs Game Reserve in Kenya; 26 of them in the Samburu Game Lodge area and 19 around the Buffalo Springs bandas. A map showing the location of 13 nesting colonies in 1976 at the Samburu site in separate acacia trees has been published (Collias & Collias 1978). Since the same colour combination of two rings was used on each leg, it was necessary to see only one leg to identify any ringed individual. On some birds a numbered EANHS aluminium ring was used on one leg and a white ring in the corresponding position on the other.

The birds reside at their nesting trees the year round and, during 6-12 April 1978, when we returned to the study sites we found 21, or 47 per cent., of the colour-ringed birds still present. We believe that the rest had suffered mortality (rather than having dispersed widely) because almost all colonies nearby were checked and found to consist of unringed individuals. All the 21 ringed birds still had all four rings, except for two at Buffalo Springs which had lost one ring each and one bird which had lost three of its original four rings. None of the 13 surviving birds at Samburu had lost any rings.

Of 20 colour-ringed survivors, 9 were still in their original colonies; 11 had moved either to the adjoining territory (7 birds) or to a colony at most two territories removed (4 birds) from the home of the bird when it was ringed. The most dominant bird in 1976 in each of two colonies continued to reside and be dominant in the same colony in 1978. One of the birds which changed colonies was discovered to circulate daily amongst three different colonies and we assigned it to the colony in which it slept. Another ringed bird, a female, was observed incubating in one colony and, within the hour, was seen to feed a nestling at a nest in another colony. She slept with her eggs. In general birds confined their activities to one colony.

Usually, territorial boundaries remained essentially the same during the two-year period, but one colony became extinct and a new one was established on the Samburu study site. Both changes caused some corresponding shifts in territorial boundaries of adjacent colonies.

Each nesting colony of White-browed Sparrow Weavers rigorously defends a territory averaging some 50 m in diameter about its colony tree, presumably so exerting some stabilizing effect on population density. The year 1976 was rather dry while 1978 was much wetter with more frequent rainfall over a more prolonged period. At the Samburu site in April 1976 we counted 88 birds in 18 colonies, while in April 1978 there were 110 birds in 18 colonies, a 25 per cent. increase. The average number of birds per colony at Samburu rose from 4.9 to 6.1 in the two years. These colonies had 205 nests (11.3 per colony) in April 1976 and 239 (13.4 per colony) in April 1978, a 17 per cent. increase.

To conclude, associated with great differences in weather in the two years, there was some increase in numbers of White-browed Sparrow Weavers. About half the 45 colour-ringed birds were lost and a little over half the ringed survivors moved either to an adjacent colony or to one no more than two territories from their home colony of two years earlier. No evidence of any long-distance dispersal was found.

#### ACKNOWLEDGEMENTS

We thank the Office of the President of Kenya for permission to do this research, the National Museums of Kenya for sponsorship and invaluable aid, the Kenya Wildlife Conservation and Management Department for permission to ring the birds, the Warden of the Samburu-Buffalo Springs Game Reserve for permission to carry out this project in the Reserve, and S. Altmann, G.R. Cunningham-van Someren and D.A. Turner for help in various ways. Our project was financed by the United States National Science Foundation.

#### REFERENCE

COLLIAS, N.E. & COLLIAS, E.C. 1978. Cooperative breeding behavior in the White-browed Sparrow Weaver. *Auk* (in press).

*N.E. Collias and E.C. Collias, University of California, Los Angeles, Ca 90024, U.S.A. and Los Angeles County Museum of Natural History, Exposition Park, Los Angeles, Ca 90007, U.S.A.*

Received 22 August 1978